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SOVIET BLOC CAPABILITIES FOR MEETING ESSENTIAL CIVILIAN  
AND MILITARY REQUIREMENTS IN A GENERAL WAR\*

I. STATEMENT OF PROBLEM

This study provides an estimate of the capabilities of the economy of the Soviet bloc (including China) in 1951 to meet essential civilian and military requirements for a general war. The term "essential" is construed to mean "of such importance to the Soviet bloc that a substantial deficit over a period of time would significantly impede its war effort." Production capabilities and allocations under cold war conditions have been employed as a base in approximating wartime capabilities. In this estimate the terms of the problem specifically exclude consideration of damage to Soviet bloc facilities. The study is limited to indigenous resources, including stockpiles, and also excludes consideration of a short war or a limited campaign.

II. SUMMARY AND CONCLUSIONS

The estimates that follow are of varying degrees of reliability and are stated categorically for the sake of clarity. A further study is therefore being made to determine the reliability of the estimates on critical facilities. Important contributions of such a study would be additional research on the pattern of allocations to be expected in wartime, consideration of the economic effect of the addition of China to the bloc, and further investigation on a number of commodities and services which are basic to wartime capabilities of the Soviet bloc.

While the economy of the Soviet bloc is capable initially of supporting a general war, deficits would appear by the end of the first year in some essential commodities and industries and later in others. Capabilities for supporting a prolonged general war are indicated in the following commodities and sectors of the economy: manpower; coal, petroleum, aluminum, antimony, and zinc; sulfuric acid, calcium carbide, synthetic ammonia, and explosives; crude steel and steel alloys; machine tools; and electronic tubes. Transportation may be deficient unless priorities are established for increasing production of transportation

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facilities. While the supply of crude rubber, including stockpiles, would be adequate for some time for meeting the raw material requirement of the rubber processing facilities, the production of rubber products might fall short of the requirements of a prolonged war.

Deficits for prolonged general war are indicated in agriculture; copper, lead, and tin; nitric acid, benzol, caustic soda, and chlorine; abrasives and industrial diamonds; machinery and equipment, such as anti-friction bearings and precision instruments.

### III. NATURE OF THE ESTIMATES

1. The estimates in this study are perforce of varying degrees of reliability but for the sake of clarity have been stated categorically. A study now under way to determine the degree of reliability of the estimates on critical facilities will be made available at a later date.

2. In advance of the conclusions of such a broader study, it is already apparent that further research on the pattern of allocations to be expected in wartime would contribute greatly to an estimate of Soviet bloc economic capabilities to meet essential civilian and military requirements in a general war. If direct military requirements were developed in terms of the timing and scope of military campaigns envisaged, indirect military requirements and minimum civilian requirements could then be approximated. In this study, numerous tentative and preliminary judgments were necessarily made as to wartime military requirements. Also the estimates are based on the assumption that Soviet bloc facilities are not damaged. Research on general availabilities from production and imports is much further advanced than that on requirements and stockpiles, because the data for the former two are much more readily obtainable.

3. Another important factor requiring considerable development is the probable priority to be assigned by the Soviet bloc for expansion of those sectors of the economy which are inadequate or barely adequate in production. While it is possible to increase production in some deficient or nearly deficient sectors, the limited resources of the economy would not permit simultaneous expansion in all fields. Priorities for expansion must be determined for materials, manpower, and transportation with respect to those lines of production most vital to the war effort. Additional data on direct war requirements would provide a basis for determining those industrial sectors that probably would be expanded. In the case of this study, those sectors of production reported as capable of expansion may not be regarded by the Soviet bloc as sufficiently vital to a general war effort to receive priority for expansion. Conversely, it is possible, depending on the scale of the demands imposed on the over-all economy by specific campaigns, that such lines of production as agriculture, for example, might receive priorities for expansion not contemplated here.

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4. A further consideration in estimating wartime economic capabilities of the Soviet bloc is the economic effect of the addition of China to the bloc. China's principal contribution would be in military manpower for war in the Far East. Exploitation by the Soviet bloc of Chinese manpower other than in the Far East would be small. Furthermore, China would impose an economic drain on the bloc for ammunition and military supplies and for technical and military leaders.

5. Research is incomplete on a number of commodities and services which are clearly basic to wartime capabilities of the Soviet bloc, including such items as production equipment, certain non-metallic manufactures (particularly plastics), certain non-ferrous metals and special steel alloys, telecommunications service, and transportation equipment.

#### IV. SOVIET BLOC CAPABILITIES

##### 1. Manpower.

It is estimated that total military forces can be increased to 260 percent of present strength, or about 21 million, within a year from the beginning of mobilization. Measures can be taken to compensate for the withdrawal of that manpower from the civilian labor force in order to sustain and increase production essential to a prolonged war. These adjustments include the utilization of younger and older persons and women not now employed, the transfer of personnel from non-essential to essential employment, longer working hours, and various measures to obtain greater efficiency. Shortages of technically trained personnel might retard efficiency somewhat throughout the orbit. Foreign technicians would be essential for any expansion of industrial production in China.

##### 2. Agricultural Products.

a. Food and clothing resources, even supplemented by stockpiles, are inadequate to sustain civilian and military forces in a prolonged general war. Serious shortages would appear first in the Far East, next in the European Satellites, and last in the USSR, where malnutrition would begin to impair industrial effort by the fourth year of general war. By the end of the sixth year of general war the food situation would become critical.

b. Rubber resources, both natural and synthetic (including stockpiles), are adequate to maintain processing facilities at capacity for a period of from 16 to 20 months. There are indications that production of rubber goods is limited by capacities and types of processing and fabricating equipment. Rubber chemicals, such as accelerators, anti-oxidants, and carbon blacks, are believed to be limiting factors in quality production. Indispensable military requirements would probably be met by allocation and priority in the use of fabricating equipment.

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### 3. Mining and Mineral Products.

#### a. Coal.

No critical coal deficiency is to be expected. Stockpiles and the availability of high-quality coal from Poland would meet increased wartime requirements and offset anticipated declines in production in other Satellites. Coal supplies of the Far East, including China, would remain substantially in balance.

#### b. Petroleum.

Supplies of POL would be adequate to meet minimum essential wartime requirements, including those for high-octane aviation gasoline. Indigenous production of essential petroleum products slightly exceeds the requirements for general war. The USSR has stockpiled POL, including high-octane aviation gasoline, equivalent to several months' supply at wartime rates of consumption.

#### c. Aluminum.

Indigenous production of aluminum plus stockpiles would meet wartime requirements for several years. Production capacity is being expanded in the USSR and could be expanded in Hungary to meet wartime requirements of the bloc if they were raised above the currently estimated 350,000 tons annually. Wartime production is estimated at 300,000 tons, current stockpiles at about 200,000 tons.

#### d. Copper.

Deficiency in copper would soon become critical. Indigenous production is only 55 to 60 percent of requirements. Stockpiles are believed to be less than 10 percent of annual wartime requirements.

#### e. Other Non-ferrous Metals.

Antimony production is adequate for wartime requirements. Lead, however, would prove seriously deficient, with indigenous production only 55 percent of wartime requirements and stockpiles less than 15 percent. Tin, also, would soon become critically short unless Chinese production were substantially increased. Zinc requirements in wartime would be balanced by indigenous production.

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#### 4. Chemicals.

The chemical industry will be able to meet military requirements for most products. This will be accomplished by allocation of products and facilities, by reducing output of civilian products, by utilization of stockpiles, and by use of substitute products and other improvisations as the need arises. Supplies of sulfuric acid, nitric acid, ammonia, glycerine, alcohol, and carbide and coke chemicals will be sufficient to meet military demands for explosives, synthetic rubber, aviation gasoline, armaments, and a vast number of other wartime essentials. Supplies of chlorine and caustic soda will be extremely short and, unless production is increased before depletion of stockpiles, will cover only the most important military needs. Wartime conditions will accentuate existing shortages of antibiotics and rubber chemicals, which even now are being urgently sought from Western countries. Shortages of these products will seriously hinder the fabrication of such items as tires, tubes, industrial belting, and shoes unless, in the interim period before depletion of stockpiles, production is increased to the required level. In view of known efforts to increase production of rubber chemicals, it is possible that the Soviets may be able to avoid a serious bottleneck in their rubber industry.

#### 5. Metals and Manufactures.

Iron ore availabilities would be sufficient for general war despite the partial dependence of Czechoslovakia and Poland on high-grade Swedish ores. Crude steel production would also meet essential requirements, as would indigenous resources of major alloying elements. There are indications that fabricating capacities and types of fabricating equipment are limiting factors on the over-all output of essential steel products. The more essential wartime military requirements would probably be met by allocation and priority use of steels and steel fabricating equipment.

#### 6. Non-metallic Manufactures.

Availabilities of abrasives would be below wartime requirements in general war. Engineering industry would face a severe shortage which would hamper but not cripple military production. The position with reference to industrial diamonds would become critical within 6 months to a year. Resort to less satisfactory manufactured substitutes would retard industrial drilling operations.

#### 7. Machinery and Equipment.

The tractor supply will probably be maintained at a level adequate for essential wartime requirements but at the expense of agriculture. Also, the machine tool industry, despite a serious deficiency in special-purpose machine tools and the rapid depreciation of machine tools acquired through Lend-Lease, will be able to support a prolonged general war. Inadequate availabilities of anti-friction bearings would seriously affect wartime production.

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3. Electronics Equipment.

Essential war requirements for electron tubes, which constitute the principal factor determining Soviet capabilities in military electronics, could probably be met through use of stockpiles as well as current production. Existing production capacity is approximately 16 percent below annual requirements for general war. It is estimated that the industry would be expanded sufficiently to meet general war requirements within 8 months of the outbreak of general war and that the present stockpile would be sufficient to avoid any critical shortage during that period.

9. Precision Instruments.

Although the shortage of certain types of precision instruments would have an important adverse effect on quality and efficiency of production, this industry of the Soviet bloc could support a general war.

10. Transportation.

The transportation system has the capacity to meet military and civilian requirements for general war after cutbacks in non-essential traffic. The most favorable traffic situation would be along East-West lines into Europe, which could support large-scale military action. However, regional transport limitations would create serious problems in areas of sparse transportation facilities. The denial of access to Western European shipping services would place serious strain on other transport facilities, particularly in the Far East.

11. Electric Power.

The electric power industry is capable of meeting essential civilian and military requirements for general war, but it would not provide an adequate reserve capacity. Under prolonged war conditions the ability of the Soviet bloc to provide new plant equipment and replacement parts would be heavily strained. Drastic cutbacks in new generating capacity and in electrified transportation equipment would be forced, and some capital goods industries would be curtailed. Nevertheless, military requirements could be met, and construction in high-priority industries could be maintained through reduction in civilian consumption levels.

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